Test Your Knowledge: Where Should you NOT Swim?

Source: Dr. Rob Brander

Answer: B

Sea Grant New York

UBS

BEACH HAZARDS

WHAT IS YOUR GREATEST FEAR?

Rob Brander

Rip Currents

Denis Mojado

Jellyfish

Stock Photo

Sharks

US Navy

Lightning

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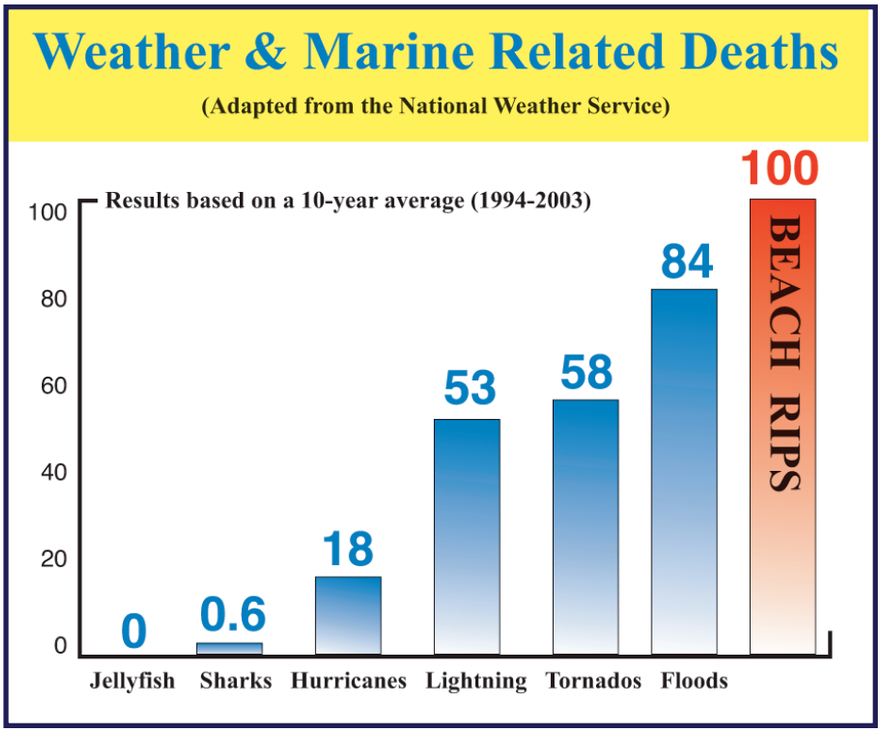
EASTERN LONG ISLAND COASTAL CONSERVATION ALLIANCE, LTD.

2010

Beach Recreation and Safety



A survey of hundreds of beachgoers in Southampton, New York, Miami Beach, Florida, and San Diego, California showed that most people have little knowledge of the possible perils in the ocean. Sharks immediately came to mind for many bathers and swimmers as the greatest threat at beaches. In fact, less than one person on average is killed annually by sharks in U.S. waters--you have a better chance of winning the New York State lottery than being eaten by a shark. It seems that the movie "Jaws" is still having an impact on the American psyche.

Jellyfish stings are another big fear of beachgoers. While thousands of people are stung each year by jellyfish, they are generally just a nuisance, not a real threat to your health. Portuguese man-of-war are the most dangerous jellyfish at U.S. beaches, but seldom does anyone have to visit a hospital as allergic reactions are rare (just as some people are hyper-sensitive to bee stings). In Australia, box jellyfish infest some tropical waters during the summer months, and these beasties must be avoided as their sting can be lethal. Other marine animals of concern to beachgoers in the survey included sting rays and crabs.

Lightning strikes are another hazard during summer thunderstorms and they can be quite dangerous; many people have been killed at golf courses and beaches. At beaches there is scant protection against lightning strikes, and people sometimes hold up umbrellas which can serve as lightning rods. Florida is the lightning capital of the U.S., but lightning is a nationwide problem.

Beachgoers also mentioned big waves and deep water as a fear, but undertow and rip tides were top answers along with sharks and jellyfish. Nearly everyone has heard of undertow, but few understand it. Year-round residents of Southampton were more knowledgeable of beach rips (e.g. rip currents) than visitors and tourists, but their understanding of rips was still lacking in many cases.

When waves break onshore, water rushes up the beach, then stops; some water soaks into the sand, but most runs back offshore. This return of water back into the ocean can be quite strong when big waves are breaking directly on the beach—this is undertow. While people can be tumbled around roughly, this return flow only goes a short distance—just to the next breaking

Waves Generated By Hurricanes Can Create Deadly Rip Currents.

2010 Hurricane Names

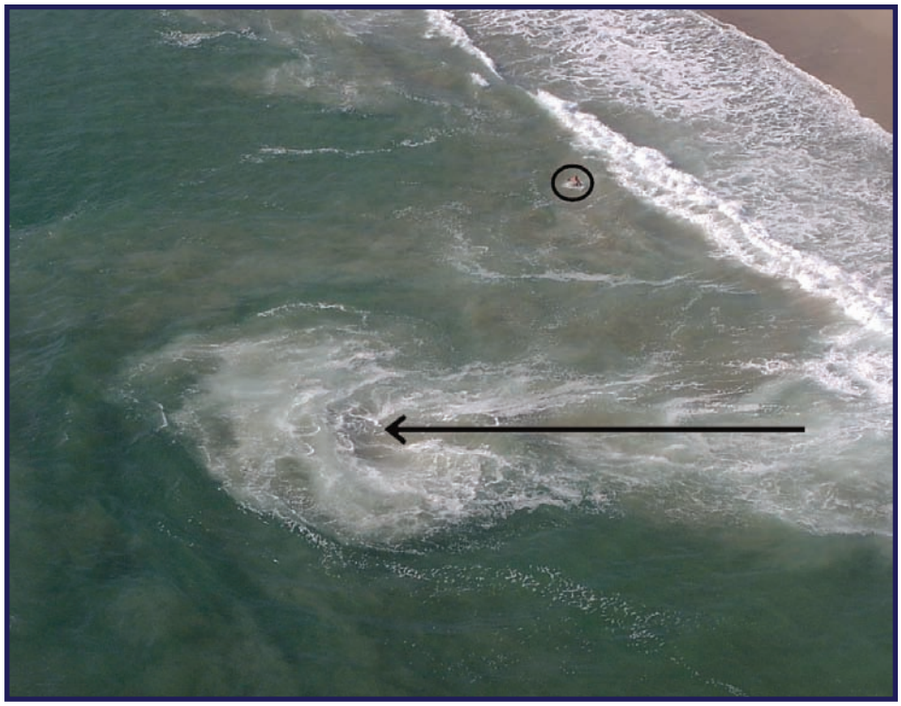
Alex	Hermine	Otto
Bonnie	Igor	Paula
Colin	Julia	Richard
Danielle	Karl	Shary
Earl	Lisa	Tomas
Fiona	Matthew	Virginie
Gaston	Nicole	Walter

FIU International Hurricane Research Center
Florida International University

School of Marine and Atmospheric Sciences
SoMAS
Stony Brook Southampton

wave—and does not pull you offshore into deep water.

Rip currents, by contrast, are powerful, channeled currents of water. These dangerous currents are formed when breaking waves push water up the beach face, with the water escaping offshore mainly as a concentrated flow.



Zuma Beach, California rip denoted by brown water moving offshore; note person in water *(source: L.A. County Coastal Monitoring Network, Aug. 2002)*

Avoid Rips by Learning to Read the Waves

Lifeguards and surfers can usually detect beach rips, but most beachgoers have difficulty spotting them. The first thing to do upon arriving at the beach is to go to the highest point possible and scan the surf for anomalies in the lines of breaking waves and any changes in water color. In the beach safety survey, Californians were generally more aware of and able to spot rip currents than their East Coast counterparts. Part of this is related to the fact that Southern California beaches are subject to big plunging waves that break consistently at a spacing of 12 to 15 seconds. As a result, the rips are generally more noticeable, especially when the offshore moving water is discolored due to foam and brown sand as evident in the rip photo at Zuma Beach, California (see above).

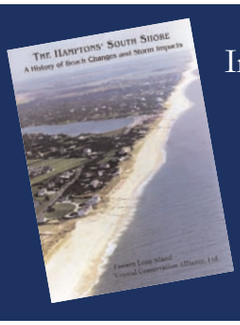
Beach rips on East Coast beaches are often disguised by confused seas when a strong onshore wind is kicking up the surf. Even on sunny, wind-free days, rips that only last for a few minutes can be strong enough to pull unsuspecting bathers into water over their head, which can lead to drowning.

In our public safety survey, beachgoers were shown a photo of a beach with breaking waves and asked where they would most likely enter the water to go swimming (see back cover). Many respondents pointed to the area of quiescent waters (B) because it appeared to be a safer place to swim. Unfortunately, these people are headed into the jaws of the rip itself! A rip current may apear as calmer water for two reasons: (1) the strong offshore-moving current is knocking down the waves or (2) the rip current occurs where a deep channel prevents the waves from breaking.

Signs of beach rips, which can vary by location, include:

- Change in water color from the surrounding water—lighter color and murker from bubbles and sediment **or** darker because of the depth of the underwater channel where the rip flows.
- Gap in breaking waves where the rip is forcing its way seaward through the surf zone.

Spotting rips can be difficult so remember "When in doubt, don't go out" and swim near a lifeguard.



In the past several years E.L.I.C.C.A. has produced a number of reports on storm impacts and beach erosion. For more information on E.L.I.C.C.A. and hurricanes, please visit our website

www.ELICCA.org

or www.DrBeach.org, www.ripcurrents.fiu.edu, and www.ripcurrents.noaa.gov